

exploration of the planet Mars.<sup>195</sup> The letter states that WARC 1992 resulted in allocations of these bands for space-to-Earth links in the 37.0-37.5 GHz band and for Earth-to-space links in the 40.0-40.5 GHz band as well as 37-38 GHz for use by space research systems to be implemented in support of Very Long Baseline Interferometry (VLBI) by satellite.<sup>196</sup> The letter further states that when operating manned spacecraft over distances as far removed from Earth as Mars, it might be necessary to combine the received signals simultaneously from more than one receiving site, e.g. Goldstone, CA, and Socorro, NM, in order to achieve mission objectives.<sup>197</sup> For those reasons, NTIA proposes that five sites be protected in addition to Goldstone, California and Green Bank, West Virginia, even though those five sites are not yet operational in these bands.<sup>198</sup> The additional sites that NTIA proposes to protect are located at Guam; Merritt Island, Florida; Wallops Island, Virginia; and White Sands and Socorro, New Mexico.<sup>199</sup> NTIA also indicates that it would accept -130 dBW/m<sup>2</sup> in any 1 MHz band as the interference protection criteria from non-Federal government terrestrial users in the 37-38 GHz to its earth stations at Goldstone, Socorro, Green Bank, Guam, Merritt Island, and Wallops Island, and White Sands.<sup>200</sup> However, the Commission can not determine from NTIA's letter where this criteria is applied, but we assume NTIA meant at the boundary (for example, a circle with a 30 km radius or at the edges of a rectangular area) and not at the actual coordinate.

64. The Commission has also received information in the "*NTIA Letter*" indicating that the Federal government has future requirements for protection of fourteen military sites within a 30 km radius of each site (except for China Lake which is a rectangular area), and that it may have additional locations in the future.<sup>201</sup> None of these fourteen sites are built or operational, and protecting sites that are not yet operational would be a significant change from the traditional first-in-time policy that we are advocating in these co-primary bands. We propose that these sites are for information only and that they do not require our licensees to protect them until they become operational. The proposed sites are located at: China Lake, CA (actually a rectangular area); San Diego, CA; Nanakuli, HI; Fishers Island, NY; St. Croix, VI; Ft. Irwin, CA; Ft. Carson, CO; Ft. Hood, TX; Ft. Bliss, TX; Yuma Proving Grounds, AZ; Ft. Huachuca, AZ; White Sands Missile Range, NM; Moody Air Force Base, GA; and Hurlburt Air Force Base, FL.<sup>202</sup> We discuss these NASA and military sites and concerns further below.

65. Due to the evolution of the 37/42 GHz bands, we are not certain that the industry and public desire to have the same 50 megahertz channel plan as the Commission adopted for the 39 GHz band and proposed for the 37 GHz band, and as we propose herein for the 42 GHz band as well. Nor are we confident that the industry wishes to retain the location of the unpaired channels near the upper portion of the 37.0-38.6 GHz band. It is also possible that potential licensees would prefer that we impose no specific channel plan. Accordingly, we believe we should re-examine this matter and seek additional comment on the most appropriate band plan for these frequency bands.

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<sup>195</sup> "*NTIA Letter*" p. 1

<sup>196</sup> *Id.* pp 1-2.

<sup>197</sup> *Id.*

<sup>198</sup> *Id.* p. 2 and Enclosure 1. The Commission believes that Goldstone is not yet operational in this band, however, the Commission stated that it would seek protection of this facility in its "36-51 Second R&O." See ¶ 62, *supra*.

<sup>199</sup> *Id.*

<sup>200</sup> *Id.*

<sup>201</sup> *Id.* p. 2 and Enclosure 2.

<sup>202</sup> *Id.* Enclosure 2.

66. Given the parameters of the 37/42 GHz bands, we could adopt a channel plan that closely parallels the 39 GHz band if we adopt geographic licensing.<sup>203</sup> However, it may be easier or more beneficial to manufacture equipment if the paired channels are contiguous instead of being separated by unpaired channels. We also note that the record on this issue is now more than six years old. Thus, we seek comment on whether to place the unpaired channels at the lower end of the band, 37.0-37.2 GHz, and thus place paired channels from 37.2 GHz contiguously through 40.0 GHz,<sup>204</sup> instead of placing the unpaired channels between the two paired bands at 38.4-38.6 GHz as originally proposed. This proposal would co-locate the unpaired channels in the 37-38 GHz range with the Federal Government's SRS, which may facilitate system planning because it may be easier to share and coordinate one-way spectrum with the Federal Government SRS than two-way spectrum where users must coordinate both frequencies. This plan would leave the 500 megahertz of spectrum from 42.0 GHz to 42.5 GHz available for five 50 megahertz paired channel separated by 250 megahertz.

67. Another possibility is to pair some of the channels in the 37.0-38.6 GHz portion with some of the channels in the 42.0-42.5 GHz portion. However, this plan may not be desirable because it is difficult to manufacture radios with such a large difference in frequencies and it thus would create other burdens such as requiring two separate radios and two different antennas due to the large spacing (about 5000 megahertz) between the frequency bands. We also could allocate channel sizes of 30 or 40 megahertz or even smaller. Perhaps smaller channels might allow for smaller businesses and private entities to effectively compete for spectrum needed for more limited applications without needing to obtain a larger amount of spectrum that would require substantial outlays of initial investment.<sup>205</sup> At the same time, entities with larger demands would be able to bid on the smaller contiguous channels if they so desire and aggregate the smaller spectrum channels into larger ones.

68. Not having a specific channel plan may allow licensees more flexibility regarding the use of the spectrum, the services they would provide, and the technologies they would use,<sup>206</sup> but we are concerned that the lack of an established channel plan might also deter the development and manufacture of equipment for the 37/42 GHz bands because of the various market uncertainties and the lack of economies of scale. Therefore, we seek comment on whether we should channelize the 37/42 GHz bands, and, if so, what channel framework and bandwidth would be appropriate. We seek comment on whether the benefits of allowing licensees to adopt any channel framework they choose outweighs the potential drawbacks. We also seek comment on whether, if we adopt a channel plan, we should permit disaggregation only by paired channels. As in other sections of this NPRM, we ask that commenters indicate whether different requirements should apply if we adopt a 70/80/90 GHz-style approach.

**F. Coordination among Terrestrial Stations in the Fixed Service in the 37.0-40.0 GHz and 42.0-42.5 GHz Bands**

69. In the *First NPRM and Order*, the Commission proposed to require 37.0-38.6 GHz and 39 GHz licensees to follow the frequency coordination process set out in Section 101.103(d) of our rules,<sup>207</sup> and proposed to establish a maximum power flux density ("PFD") or field strength limit at licensees'

<sup>203</sup> See *Report and Order and Second NPRM*, 12 FCC Rcd at 18,616-17 ¶¶ 27-28.

<sup>204</sup> See Appendix B, Proposed Rules, § 101.147, Option 1.

<sup>205</sup> See 47 U.S.C. § 309(j)(4)(D).

<sup>206</sup> Declining to propose a channel plan would result in two large contiguous blocks of spectrum, one of 1600 megahertz from 37.0-38.6 GHz and one of 500 megahertz from 42.0-42.5 GHz.

<sup>207</sup> 47 C.F.R. § 101.103(d).

geographic boundaries.<sup>208</sup> In response, the National Spectrum Management Association ("NSMA") explained that it had not completed an interference study concerning maximum field strength and PFD limits.<sup>209</sup> In the *Report and Order and Second NPRM*, the Commission adopted interim frequency coordination procedures in order to facilitate coordination between 39 GHz band licensees licensed in adjoining areas, but declined to establish final rules concerning maximum field strength or PFD limits pending the results of the NSMA study.<sup>210</sup> Specifically, the Commission decided to continue to use the frequency coordination procedures in Section 101.103(d) with the following modifications: (1) neighboring co-channel and adjacent channel licensees must coordinate only within 16 kilometers of an adjacent service area boundary, and (2) licensees that receive coordination notifications must respond within ten days as opposed to the normal thirty days.<sup>211</sup>

70. Later, the Commission issued new coordination requirements for the 24 GHz service, which are similar to the coordination requirements for the 39 GHz band.<sup>212</sup> The Commission eliminated the specific distance coordination requirement for the 24 GHz band, and instead required stations that have optical line of sight<sup>213</sup> into an adjacent area to contact the relevant licensee regarding mutually agreeable coordination of facilities.<sup>214</sup> In addition, the Commission completed two bilateral agreements on coordinating the 24 GHz, 28 GHz (LMDS), and 39 GHz frequency bands with Canada ("the Canadian Agreements").<sup>215</sup> In these two agreements, the factor used to determine whether coordination is required is predominantly by a PFD at the border between the two countries. The PFDs accepted in these agreements were -114 dBW/m<sup>2</sup> in any 1 megahertz band for both 24 GHz and 28 GHz, and -125 dBW/m<sup>2</sup> in any 1 megahertz band for 39 GHz.

71. We now tentatively conclude that instead of specifying a fixed distance and having two requirements for coordination (the 16 kilometer distance and the PFD level in the Canadian Agreements), a general coordination requirement utilizing the PFD value set out in the Canadian Agreements for 39 GHz of -125 dBW/m<sup>2</sup> in any 1 megahertz band would be more appropriate for the 39 GHz and 37/42 GHz bands. We propose to require 39 GHz and 37/42 GHz band licensees to coordinate when their facilities

<sup>208</sup> *First NPRM and Order*, 11 FCC Rcd at 4,986-87 ¶ 117.

<sup>209</sup> NSMA Comments at 1-8. The NSMA is a private organization that leads efforts to develop and refine the frequency coordination procedures used by the point-to-point microwave industry.

<sup>210</sup> *Report and Order and Second NPRM*, 12 FCC Rcd at 18,633-34 ¶¶ 68-69. That study has not been completed.

<sup>211</sup> *Id.* at 18,634 ¶ 69.

<sup>212</sup> *See 24 GHz Report and Order*, 15 FCC Rcd at 16987 ¶ 29 (citing 47 C.F.R. § 101.509).

<sup>213</sup> Optical line of sight is a visual path (an unobstructed straight line) from the transmitting antenna to another site or antenna. In effect, buildings, curvature of the earth, or mountains would block the path. Because frequencies in these ranges travel very short distances, we have chosen to use optical line of sight, which differs slightly from radio line of sight in that optical line of sight does not take into consideration the refraction of radio waves in the atmosphere, which would have an effect if these signals traveled longer distances. Optical line of sight can be calculated using the formula  $d = 3.57\sqrt{h}$ , where  $d$  is the distance between the antenna and the horizon in kilometers and  $h$  is the antenna height in meters. The formula for radio or effective line of sight is  $d = 3.57\sqrt{K h}$ , where  $K = 4/3$  and is the adjustment for refraction. The maximum optical distance between two antennas where  $h_{tx}$  is the transmit antenna height and  $h_{rx}$  is the receive antenna height is  $d = 3.09(\sqrt{h_{tx}} + \sqrt{h_{rx}})$ .

<sup>214</sup> *See* 47 C.F.R. § 101.509.

<sup>215</sup> These two agreements can be found at: [http://www.fcc.gov/ib/sand/agree/can\\_nonbroad\\_agree.html](http://www.fcc.gov/ib/sand/agree/can_nonbroad_agree.html) in PDF format under "broadband wireless systems" for 24 GHz and 39 GHz and under "LMDS" for 28 GHz. Licensees in these bands are required to comply with the agreements.

(antennas) have optical line-of-sight into another licensee's geographic area.<sup>216</sup> This line of sight should take into consideration all the possible relevant heights of the other licensee's antenna(s). The rule would also protect the operations of 39 GHz incumbent licensees' rectangular service areas within the same auctioned EA.<sup>217</sup> This proposal allows for blockage due to mountains or other terrain. If the licensee's system (antenna) has optical line of sight but the PFD generated at the boundary of another licensee's geographic area (or, if in the same geographic area due to an incumbent) at the other licensee's facility is below the level of -125 dBW/m<sup>2</sup> in any 1 megahertz band, coordination would not be necessary. Further, we propose to require such coordination for co-channel 39 GHz licensees and 37/42 GHz licensees in adjacent geographic areas or in the same geographic areas in the case of aggregation, disaggregation or partitioning.<sup>218</sup> Under our proposal, adjacent and co-channel coordination would have to be completed successfully before operation can commence.

72. In the event that no 39 GHz or 37/42 GHz licensee exists in an adjacent area or has not yet deployed stations in an adjacent area (or in the same geographic area in the case of partitioning), we propose that the first-mover licensee be allowed to construct and operate facilities without coordination. Both the first-mover and the second-mover licensees eventually would have to coordinate their stations before the second mover's stations are deployed, in order to achieve mutual accommodation of the licensees' rights and to ensure cooperative and effective use of the spectrum in each area. If existing facilities are operating above -125 dBW/m<sup>2</sup> in any 1 megahertz level, we propose that its owner-licensee be required to lower its facilities to accommodate the licensee in the adjacent area unless the two licensees otherwise reach an agreement. We believe that such a coordination procedure would be superior to the specific, 16-kilometer fixed distance interim procedure adopted for the 39 GHz band, because it provides flexibility and can be adopted for any frequency range, environment or terrain conditions where the principal mode of interference is line-of-sight or near-line-of-sight propagation. This method could allow licensees the flexibility of determining their own coordination parameters between areas while not limiting industry groups such as NSMA from proposing a uniform set of standards. We also request comment on whether a PFD or field strength limit at a licensee's geographic area boundaries or facilities, when in the same geographic area, would facilitate the growth and development of the 37/42 GHz bands as well as the 39 GHz band.

73. In addition, we propose that 37/42 GHz licensees follow the technical criteria set out in the agreement reached with Canada for 39 GHz until such time as the United States can establish a formal or informal agreement with Canada on coordinating the 37/42 GHz bands. We also propose that 39 GHz and 37/42 GHz licensees follow the same technical criteria along the border with Mexico until a formal or informal agreement can be reached with Mexico. Licensees are required to comply with whatever formal agreements are reached with Canada and Mexico.

74. Because we propose to allow flexible bandwidths in the 37/42 GHz bands, one licensee may have a bandwidth of, e.g., 25 megahertz while another may use 150 megahertz. The calculation for emission limitations needs to be adjusted accordingly, because there may not be a standard "authorized bandwidth maximum."<sup>219</sup> We have proposed under Section 101.109 of the rules to set the maximum bandwidth at 50 megahertz for 37/42 GHz, consistent with 39 GHz, irrespective of the actual bandwidth used. This proposal means that licensees would limit the emissions at the channels' edges using a value of

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<sup>216</sup> Here, the geographic service areas are comprised of EAs or other defined geographical areas.

<sup>217</sup> 39 GHz incumbents have self-defined rectangular areas that will represent the boundary of the incumbent.

<sup>218</sup> At a minimum, stations whose radio horizon overlaps adjacent areas should contact the relevant licensees regarding coordination of facilities.

<sup>219</sup> See 47 C.F.R. § 101.111.

50 megahertz for B in the equations under Section 101.111 even if they were to use channels larger or smaller than 50 megahertz. We seek comment on how to adjust the emission limitations in Section 101.111 of our rules, if at all. We seek comment on these proposals.

**G. Coordination among Fixed Service Terrestrial Stations and Fixed-Satellite Service Satellite Earth Stations in the 37.5-40.0 and 42.0-42.5 GHz Bands**

75. In the *Memorandum Opinion and Order* adopted in the 39 GHz proceeding, the Commission maintained the possibility for satellite operators to gain access to the 39.5-40.0 GHz band.<sup>220</sup> While rejecting TRW's request to reallocate the 39.5-40.0 GHz band exclusively for satellite services, the Commission nonetheless recognized that the existing allocation includes satellite services in the band and stated that entities with terrestrial wireless licenses would not be constrained from deploying satellite earth stations in the band.<sup>221</sup> The Commission determined that satellite operators would be free to provide service either through a terrestrial wireless geographic area license won at auction pursuant to Part 101 of the Commission's rules or through a post-auction arrangement reached with the winning bidder of a terrestrial license. The Commission clarified that a provider of satellite services in the 39.5-40.0 GHz band also would be required to obtain a license pursuant to Part 25, which governs satellite communications.<sup>222</sup> In the *Further Notice of Proposed Rulemaking* to establish the "soft segmentation" approach in the 37.5-40.0 GHz and 42.0-42.5 GHz band, the Commission proposed to apply the same coordination requirements to Part 101 FSS earth stations licenses that apply to the fixed wireless service in the 39 GHz band.<sup>223</sup> The coordination requirements are specified in Section 101.103(i)(1). Specifically, the Commission sought comment on how it should apply its Part 101 Rules governing certain portions of the 36.0-51.4 GHz band to future operations of FSS earth stations where Part 101 EA licensees have blanket authority to construct and operate FS stations in a specified EA.<sup>224</sup> Furthermore, incumbent Part 101 licensees have similar rights in their licensed areas, which are generally rectangular in shape and are defined based on the individual service requirements of the licensee. The Commission has stated that satellite earth station licensees "may eventually be afforded opportunities to use the spectrum designated for wireless services, consistent with the U.S. Table of Frequency Allocations," and the Wireless Bureau has addressed precisely how the Part 101 Rules would be applied to a satellite earth station licensee that obtains a Part 101 license.<sup>225</sup> We now seek further comment on the appropriate method to coordinate

<sup>220</sup> See Amendment of the Commission's Rules Regarding the 37.0-38.6 GHz and 38.6-40.0 GHz Bands, ET Docket No. 95-183, and Implementation of Section 309(j) of the Communications Act - Competitive Bidding, 37.0-38.6 GHz and 38.6-40.0 GHz Bands, PP Docket No. 93-253, *Memorandum Opinion and Order*, 14 FCC Rcd 12,428 at 12,453-12,454 ¶¶ 47-49 (1999) (39 GHz MO&O).

<sup>221</sup> *Id.*

<sup>222</sup> 36-51 GHz Reconsideration Order, 15 FCC Rcd at 1770 n.29.

<sup>223</sup> Allocation and Designation of Spectrum for Fixed-Satellite Services in the 37.5-38.5 GHz, 40.5-41.5 GHz and 48.2-50.2 GHz Frequency Bands, IB Docket No. 97-95, 16 FCC Rcd 12,244, 12,261-62 ¶¶ 48-51 (2001) (*"Allocation Further Notice"*).

<sup>224</sup> *Id.* 47 C.F.R. § 101.147; see also 47 C.F.R. § 101.149 (explaining terms and conditions of EA licenses).

<sup>225</sup> See 36-51 GHz Reconsideration Order, 15 FCC Rcd at 1,769 ¶¶ 6-8; cf. TRW Inc., Request for Waiver of the Commission's Rules to Provide Fixed Satellite Service in the 39 GHz Band, *Memorandum Opinion and Order*, 16 FCC Rcd 5,198, 5,202 ¶ 11 (WTB 2001) ("amplify[ing] what is permitted under the Commission's Part 101 Rules"). The Commission clarified that all operations under a 39 GHz EA license, including future operations of any FSS earth stations, must comply with the Part 101 rules governing the operation of the 39 GHz band. With regard to coordination, the same criteria as applied to terrestrial stations would be applied to earth stations. For example, adjacent EA licensees and incumbents must coordinate only their stations within 16 kilometers of the boundary of their areas, regardless of whether an earth station may require greater consideration. Likewise, an EA

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satellite earth stations that receive signals from satellites transmitting in the 37.5-40.0 GHz band with terrestrial fixed stations.

76. Under the current rules, an earth station applicant may obtain authority to operate within the 39 GHz band by securing a Part 101 EA license through competitive bidding or through partitioning in an area in which it wants to operate its earth station.<sup>226</sup> An FSS earth station operator also can apply for a Part 25 license, provided that the earth station applicant has secured an agreement with all affected Part 101 licensees prior to filing an application. To address interference concerns, the Commission proposed to apply to earth stations the same coordination rules that apply to terrestrial stations operating under Part 101 of our rules.<sup>227</sup> Under this proposal, and according to the FS rules explained above, a Part 101 earth station licensee would be required to coordinate all earth stations located within 16 km of the boundary of its Part 101 licensed area. An earth station would not receive interference protection from other Part 101 EA licensed stations that are further than 16 km from its EA boundary. Likewise, a terrestrial fixed station Part 101 licensee in another EA would be required to coordinate all of its proposed stations within 16 km of the boundary of its licensed area with all FSS earth stations within 16 km of the boundaries of adjacent areas. In the case of an FSS earth station operating in an EA under agreement with the Part 101 EA licensee of that area, the affected parties would address the resolution of any interference between the earth station and stations of the EA licensee or incumbent self-defined areas under the terms of their agreement.

77. As with terrestrial fixed coordination, the sufficiency of the 16 km coordination distance remains debatable, and current licensing policy in the 24 GHz Service favors replacing the coordination distance with a PFD coordination trigger.<sup>228</sup> We propose to apply the same coordination trigger to Part 101 earth station licensees in the 37.5-40.0 GHz and 42.0-42.5 GHz bands as the trigger that we have proposed for terrestrial stations in the fixed service in the same bands, based upon the PFD level in the Canadian Agreements so that terrestrial coordination parameters are the same everywhere.<sup>229</sup> In that manner, earth station licensees will not be conveyed greater rights than terrestrial stations and will not be able to claim interference from fixed terrestrial stations at distances greater than the fixed terrestrial stations can. Specifically, Part 101 earth station licensees are required to coordinate with existing terrestrial stations when there is optical line of sight between the earth station and an existing terrestrial station in the same or adjacent geographic area, and terrestrial stations in the fixed service are required to coordinate with a Part 101 earth station licensee when a terrestrial station exceeds the threshold PFD level of -125 dBW/m<sup>2</sup> in any 1 megahertz band at the boundary of the Part 101 earth station licensee's geographic area. Here, we seek comment on whether to apply either the 16 km distance or the PFD standard to earth stations in the 37.5-40.0 GHz and 42.0-42.5 GHz bands for the geographic area licensing approach.<sup>230</sup> We also seek

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licensee (or a party it has reached agreement with) is not entitled to protection (vis-a-vis the incumbent licensee's operations) for earth stations deployed in areas inside the rectangular boundaries of incumbents license areas, even if that license area is completely or partially located inside the licensed EA. The Commission explained that this requirement may necessitate locating earth stations away from the EA or incumbent boundaries. Furthermore, an EA licensee, whether providing terrestrial or FSS earth station operations, must demonstrate substantial service at the time of its license renewal. Once the Commission considers and adopts technical standards for terrestrial and FSS to share this spectrum, an EA licensee may satisfy this and any other Part 101 build-out requirements through the operation of satellite earth stations. *Id.* at ¶ 12.

<sup>226</sup> As noted above, the satellite operator also must obtain authorization pursuant to Part 25. *See supra* text accompanying note 222.

<sup>227</sup> *See Allocation Further Notice*, 16 FCC Rcd at 12,262 at ¶ 49.

<sup>228</sup> *See* 47 C.F.R. § 101.509(e)

<sup>229</sup> *See* note 215, *supra*, and accompanying text.

comment on standards that would be appropriate if we adopt a 70/80/90 GHz-style framework or other approach for 37/42 GHz.

**H. Fixed Satellite Earth Station Operators That Obtain Part 101 Licenses or Agreements in the 37/42 GHz Band.**

78. Generally, we regulate satellite earth stations under Part 25 of our rules. In this regard, we note that we must take further action under Part 25 of our rules before FSS earth stations can operate and receive signals in the 37.5-40.0 GHz and 42.0-42.5 GHz bands. This section concerns FSS entities that seek to obtain terrestrial licenses in the 37/42 GHz band in accordance with the Commission's Part 101 rules.

79. We note that FSS licensees may construct earth stations with technical characteristics that vary significantly from those of Part 101 terrestrial licensees. Satellite earth stations may obtain certain frequency rights within an operational area either by competitive bidding for a geographic area license (and become a Part 101 licensee), or by obtaining an agreement with an existing geographic area licensee.<sup>231</sup> Because we have designated the spectrum below 40.0 GHz for wireless services, we concluded that some type of restriction should be placed upon the type of earth station that will receive protection from interference in the 37.5-40.0 GHz band,<sup>232</sup> and the Commission further concluded that FSS earth stations in this portion of the spectrum should be limited to "gateways."<sup>233</sup>

80. At present, the U.S. does not have any fixed satellite service allocation in the 42.0-42.5 GHz band. The International Table of Allocations does have an FSS allocation in this band.<sup>234</sup> Licensees in the 42.0-42.5 GHz band should be aware that satellites may be allocated to the 42.0-42.5 GHz band in the future and further coordination procedures would need to be developed at that time.<sup>235</sup>

81. We propose that all 37/42 GHz FSS earth stations that obtain a Part 101 geographic area license through competitive bidding or other license option must comply with the same coordination and buildout criteria as terrestrial licensees and with the Part 101 rules governing the operation of the 37/42 GHz band.<sup>236</sup> With regard to the buildout requirements, a Part 101 licensee, whether providing terrestrial or FSS earth station operations in its EA, would demonstrate substantial service at the time of its license renewal.<sup>237</sup> A licensee may satisfy Part 101 buildout requirements through the operation of satellite earth stations. FSS earth station licensees that only obtain a Part 25 license and operate through an agreement

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<sup>230</sup> See *supra* ¶¶ 66-69.

<sup>231</sup> Thus we may have a Part 25 earth station licensee who also holds a Part 101 license as compared to a Part 25 licensee who secures agreement with a Part 101 licensee.

<sup>232</sup> See 36-51 GHz Second R&O at ¶ 32.

<sup>233</sup> *Id.* at ¶ 33 and new rule 25.202 note 16 ("Use of this band by the fixed-satellite service is limited to 'gateway' earth station operations, provided the licensee under this Part obtains a license under Part 101 of this Chapter or an agreement from a Part 101 licensee for the area in which an earth station is to be located. Satellite earth station facilities in this band may not be ubiquitously deployed and may not be used to serve individual consumers").

<sup>234</sup> See 47 C.F.R. § 2.106, pp. 76-77.

<sup>235</sup> See 36-51 GHz Second R&O at ¶ 67.

<sup>236</sup> Earth stations must also comply with 47 C.F.R. Part 25.

<sup>237</sup> See 39 GHz R&O, 12 FCC Rcd at 18,623-26 ¶¶ 41-50.

with an existing FS Part 101 licensee<sup>238</sup> would only be subject to the construction requirements of Part 25.

82. While we believe that these proposals are appropriate in the context of geographic area licensing, for the 37/42 GHz bands different rules might be required if we adopt a link-by-link site registration process with nationwide licenses. We seek comment on these proposals and suggestions for other rules that might be appropriate depending upon circumstances.

**I. Sharing & Coordination Between Non-Federal Government and Federal Government Services at 37.0-38.6 GHz and 39.5-40.0 GHz**

83. The Commission has been negotiating with the National Telecommunications and Information Administration ("NTIA") on sharing and coordination between the non-Federal government and Federal government stations in this band. These negotiations were generally premised on the assumption that we would apply the same kind of regulatory framework to the 37/42 GHz bands as we have applied to the 39 GHz band, i.e., geographic area licensing. However, independent of the licensing approach that the Commission chooses for these bands, the basic coordination procedures with NTIA will be the same because they are based on a site-by-site method. Comparable procedures could be applied if we adopt a 70/80/90 GHz model with a nation-wide license and individual registration of sites, though under that approach our proposals might need to be modified to take into account the differing roles to be played by third-party non-Federal government database managers and how they would exchange data with NTIA.

84. The following are the procedures that we propose for implementing the necessary rules and process. Sharing between non-Federal government and Federal government users in the 37.0-38.6 GHz and 39.5-40.0 GHz bands would follow a "first-in-time" principle for co-primary services. This means that stations of a co-primary service would not be allowed to cause harmful interference to stations of other co-primary services to which frequencies are already assigned and properly authorized. Existing stations would be entitled to claim protection from harmful interference from other co-primary stations assigned at a later date. Last-filed stations would have the burden of relieving the harmful interference.

85. Consistent with Section IV(6) of the Memorandum of Understanding ("MOU") between the Commission and NTIA, dated January 31, 2003, the Commission and NTIA would maintain current lists of their authorized frequency assignments on the Universal Licensing System ("ULS") and the Federal government Master Frequency File ("GMF"), respectively, in the 37.0-38.6 GHz band, including site-based facilities, and exchange such information as appropriate to coordinate spectrum use.<sup>239</sup> The site-based coordination procedures proposed here involve the Interdepartment Radio Advisory Committee ("IRAC") and contacts between our licensees and Federal government agencies through the Commission, which represents the non-Federal government facilities, and the NTIA, which represents the Federal government agencies. Problems would be referred by the Commission back to its licensees/applicants and by the NTIA to Federal government agencies for resolution. Consistent with the *FCC/NTIA MOU*, Sections IV (3) & (4), cooperation, timely resolution, and notice by the Commission and the NTIA would govern final action.

86. We propose that non-Federal government operators/licensees in the 37.0-38.6 GHz frequency band be responsible for maintaining databases of their fixed stations, including sufficient data for other licensees, coordinators, and the Federal government to make a determination of potential interference. This information would also be useful for coordination with adjacent area operators and for formulating

<sup>238</sup> For example, an FS licensee could partition an area or disaggregate spectrum to a satellite earth station licensee or just complete a coordination agreement with the earth station.

<sup>239</sup> Memorandum of Understanding between the Federal Communications Commission and the National Telecommunications and Information Administration (Jan. 31, 2003) ("*FCC/NTIA MOU*").



sharing agreements. Non-Federal government licensees would have the option of maintaining their own databases for their facilities or of selecting third-party database managers, frequency coordinators, or other entities (collectively "database manager") to maintain their database of facilities. The database manager would be responsible to the licensee and would share the technical data with the Commission and other database managers as needed for proper coordination, and retain records of the coordination agreements with other parties. All coordination agreements would remain in force in the event the licensee transfers its license, partitions its service area, or disaggregates its spectrum, until new agreements are reached.

87. We also propose that, upon request, the non-Federal government operators/licensees be required to make available all necessary technical database information to the Commission in a timely and convenient manner sufficient for resolving interference complaints with NTIA in the event of disputes. In addition to maintaining their own databases, the non-Federal government licensees would be required to register their technical data electronically into the ULS for each station in their authorized service areas in order to make available accurate information on the use of the facilities and also to implement the "first-in-time" principle for coordination with Federal government facilities. This data should include: 1) the date of the initial operating capability ("IOC") of each station, 2) specific information identifying the station locations, 3) technical operating capabilities of the stations, including all of the power and antenna characteristics specified in Section 101.103(d)(2)(ii) of our rules, and 4) whether the station has optical line-of-site to another facility with which it is being coordinated, if known at the time. This site-based information would be entered into the record of the area license in the ULS database by electronically registering notifications to the initial Commission Form 601 using Schedule I, but not more than twelve (12) months before operations are scheduled to begin.

88. Further, we propose that the regular fee schedule for microwave services would apply to all requests, applications and licenses, except as noted below. Licensees would be required to follow existing practices and precedents regarding fees associated with initial licenses, and to file notifications in the ULS to supply the technical information needed to coordinate each station with Federal government facilities. The Commission would require no additional filing or regulatory fees for the registering of notifications of additional technical information, if the technical information entered into the ULS is only needed for coordination with Federal government facilities. When revisions to ULS are developed for adding the capability to handle licensees in the 37.0-38.6 GHz band, the capability to collect this additional site-based information for notifications would be added to the capability to handle "initial" auction winners as licensees.

89. For geographic area licensees, notification and response for site-by-site coordination for these stations would require variations in the general coordination procedures as given in Section 101.103 of our rules, which otherwise generally applies. We propose that geographic area licensees select site frequencies within their assigned blocks of spectrum and initiate the coordination process by notifying the other parties with whom they must coordinate. Presently the Federal government does not have any authorized and operating stations in the 37.0-38.6 GHz band, but does want to be able to operate future stations if a need arises. Because NTIA has agreed to encourage federal agencies to satisfy their fixed and mobile requirements through commercial services, or by using the 36.0-37.0 GHz and 42.5-43.5 GHz bands,<sup>240</sup> we do not anticipate that the Federal government will add many stations in the 37.0-38.6 GHz band. Registrations of licensee sites on Schedule I of Form 601 must include, in addition to the relevant technical details as shown in Section 101.103(d)(2)(ii), the licensee's determination of whether possible optical line-of-site exists to relevant (future) Federal government facilities.<sup>241</sup> If it determines that optical line-of-site does not exist, the applicant should explain the determination. The Commission would note the activation

<sup>240</sup> 36-51 GHz Order, 13 FCC Rcd 24,649 ¶ 42.

<sup>241</sup> The licensee must make this optical line-of-site calculation with only the partial information available in Appendix B.

date of the station, but would not make a determination that any of the information is correct or acceptable for filing. Coordination involving existing and future Federal government facilities would require licensees and applicants to ensure that their data is accurately reflected in the ULS.

90. New Federal government stations in the 37.0-38.6 GHz band should be coordinated consistent with these procedures. We anticipate that the Federal government will maintain its own database of facilities and coordinate through the Commission. The Commission will rely on the data in ULS supplied by our licensees/applicants to conduct coordination, but may also need to contact the licensee(s) for specific information concerning protection from the Federal government facilities. Federal government operators with facilities in the 37.0-38.6 GHz band should cooperate in the coordination process by responding to non-Federal government coordination notifications from the Commission. Federal government operators with new stations to coordinate can identify and directly access the technical information of the non-Federal government licensees through the ULS. Examining the data in the ULS before formally coordinating with the Commission in the appropriate frequency band and geographic service area may speed up the frequency selection process. Federal government operators with new stations should notify the Commission through the IRAC process with sufficient technical detail to determine whether potential interference is possible with facilities of our licensees/applicants.

91. Again, we emphasize that these proposals were negotiated on the assumption that we would be applying a 39 GHz-style geographic area licensing approach to the 37/42 GHz bands. We seek comment on these proposals, and in particular we seek comment on modifications that would be required if we decide to apply a 70/80/90 GHz-style link-by-link registration approach.

#### **1. Non-Federal Government Operations Coordinating with Existing Federal Government Operations**

92. We propose that non-Federal government terrestrial users in the band 37.0-38.6 GHz, and also operators who wish to protect an FSS (downlink) earth station in the band 37.5-38.6 GHz, be required to coordinate only with existing and operational Federal government SRS (downlink space research antennas in the 37-38 GHz band) at Goldstone, California, and Green Bank, West Virginia, by contacting the Federal Points of Contact for Frequency Coordination identified in Appendix C for these two facilities and obtain letters of approval for their operations as is presently done for Greenbank under 1.924(a)(1) of our rules.<sup>242</sup> We also propose that the coordination triggers for non-Federal government terrestrial stations be whether they are to be located within 80 km of the coordinates for Goldstone, California<sup>243</sup>, or within the rectangular area given for Green Bank, West Virginia. We propose that the interference protection criterion for these earth station facilities is -130 dBW/m<sup>2</sup> in any 1 MHz band at the relevant boundary.<sup>244</sup> Non-Federal government terrestrial users in the band 37.0-38.6 GHz, and also operators who wish to protect an FSS (downlink) earth station in the band 37.5-38.6 GHz, are also required to coordinate with the existing terrestrial Federal government facilities in 37.0-38.6 GHz (no stations presently exist) through the ULS and IRAC process. The proposed coordination triggers for non-Federal government stations are that the antenna must have optical line-of-sight to the Federal government terrestrial facilities, as discussed in paragraphs [71-72 and 77-77], *supra*, and that the PFD at the site exceed a threshold of -125 dBW/m<sup>2</sup> in any 1 MHz band. Harmful interference is not anticipated if neither of these conditions exists. The Commission and NTIA would resolve interference problems referred to them to their mutual satisfaction on a first-in-time sharing basis. We seek comment on this proposal.

<sup>242</sup> NTIA requests that within the band 37-38 GHz we protect a Goldstone rectangular area bounded by the coordinates between latitudes 34-21 N and 35-59 N and between longitudes 115-26 W and 118-21 W (approx 200 km by 280 km), a Socorro, Very Large Array, rectangular area bounded by the coordinates between latitudes 32-30 N and 35-30 N and between longitudes 106-00 W and 109-00 W (approx. 260 km by 350 km), three tracking  
(continued....)

## 2. Non-Federal Government Operations Coordinating with Future Federal Government Operations

93. Non-Federal government terrestrial users in the band 37.0-38.6 GHz, and also operators who are required to protect an FSS (downlink) earth station in the band 37.5-38.6 GHz, are required to coordinate with future Federal government SRS (downlink space research antennas) operations and Federal government terrestrial facilities in the band 37.0-38.6 GHz at locations not identified at this time. We propose that the coordination triggers for non-Federal government stations be that the antenna must be within optical line-of-sight of an authorized Federal government site (the site to be protected could be a circle or a rectangle) and that the station have a PFD at the site exceeding a threshold of  $-130 \text{ dBW/m}^2$  in any 1 MHz band for the SRS (downlink) earth station operations and  $-125 \text{ dBW/m}^2$  in any 1 MHz band for the terrestrial facilities. Licensees must include calculations or other representations in their registration of each site and coordination material that indicate whether the PFD and/or optical line-of-site conditions exist at a previously coordinated Federal government facility. This information will be used by the Commission and NTIA through the IRAC process to coordinate the stations. We do not expect harmful interference to occur if neither of these conditions exists. We will expect the coordinating parties to resolve interference protection to their mutual satisfaction based on first-in-time sharing, or to negotiate written sharing agreements. We seek comment on this proposal.

## 3. Federal Government Operations Coordinating with Future Non-Federal Government Operations

94. We expect Federal government SRS (downlink space research antennas) users in the band 37.0-38.0 GHz and Federal government terrestrial users in the 37.0-38.6 GHz band to coordinate with existing and future non-Federal government operations. We propose that the coordination triggers for Federal government SRS stations (these are receive earth stations) be that the antenna have optical line-of-sight to an authorized non-Federal government site and have a vulnerability threshold PFD at the SRS receiver site of  $-130 \text{ dBW/m}^2$  in any 1 MHz band. The coordinating parties will be expected to resolve interference protection to their mutual satisfaction based on first-in-time sharing. The proposed coordination triggers for Federal government terrestrial stations would be that the transmitting antenna have optical line-of-sight to the site of an authorized non-Federal government facility and have a PFD at

(...continued from previous page)

stations within a 30 km radius of 13-36-55 N, 144-51-22 E (Guam); 28-21-28 N 80-42-13 W (Meritt Island); and 37-55-45- N 75-28-35 W (Wallops Island); and one tracking station within 80 km of 32-20-59 N 106-36-31 W (White Sands). See "NTIA Letter," Enclosure 1. NTIA has also notified the Commission that the military has identified fourteen (14) planned sites within a 30 km radius of each set of coordinates (except for China Lake located at: China Lake, CA (actually a rectangular area); San Diego, CA; Nanakuli, HI; Fishers Island, NY; St. Croix, VI; Ft. Irwin, CA; Ft. Carson, CO; Ft. Hood, TX; Ft. Bliss, TX; Yuma Proving Grounds, AZ; Ft. Huachuca, AZ; White Sands Missile Range, NM; Moody Air Force Base, GA; and Hurlburt Air Force Base, FL. See "NTIA Letter," Enclosure 2 NTIA notes that the military may have requirements for additional sites in the future.

<sup>243</sup> In the "NTIA Letter," it now proposes that the protection around Goldstone be a rectangular area 200 km tall by 280 km wide with the southwest corner resting on Los Angeles. In paragraph 41 of the "36-51 GHz Second R&O" the Commission indicated that it would seek comments on methods to protect Goldstone in this proceeding and among the possibilities would be to adopt a footnote to the Table Of Allocations modeled after Footnote US311 which establishes an 80 km radius around Goldstone for protection from stations operating in the fixed and mobile services in the 1350-1400 MHz and 4950-4990 MHz bands.

<sup>244</sup> See "NTIA letter," p.2.

the non-Federal government site exceeding a threshold of -125 dBW/m<sup>2</sup> in any 1 MHz band. The Commission and NTIA would resolve interference problems referred to them to their mutual satisfaction based on first-in-time sharing.

95. Existing geographic area licenses were auctioned in the 38.6-40 GHz band, and the Commission does not require these licensees to inform us of the locations of their facilities or maintain database information because these stations do not presently have to coordinate with NTIA. Therefore, ULS does not contain any technical parameters or the locations of these facilities. We propose that any possible future Federal government operators<sup>245</sup> that would be required to coordinate and protect non-Federal government terrestrial stations or FSS (downlink) earth stations in the 39.5-40 GHz band coordinate directly with the existing non-Federal government licensee in whose service area the Federal government earth station is to be located, and with respect to other nearby service area licensees. All parties concerned should resolve the coordination problems on a first-in-time sharing basis and obtain coordination agreements with prior licensed facility operators. Specifically, if existing non-Federal government licensees do not already have facilities in or near an area where the Federal government wishes to place an earth station, we propose that the non-Federal government licensee would be required to accommodate the Government's request and allow the earth station to be built and protected as mutually agreed. We seek comment on all these proposals.

#### J. Competitive Bidding Procedures

96. If we decide to adopt a geographic area licensing scheme under which we would receive mutually exclusive applications for initial licenses in the 37/42 GHz band, we would be required, pursuant to section 309(j) of the Communications Act, to resolve such applications by competitive bidding.<sup>246</sup> In this connection, we note that the Commission has previously concluded that Section 647 of the Open-Market Reorganization for the Betterment of International Telecommunications Act ("ORBIT Act") does not bar the use of competitive bidding to award licenses to provide terrestrial services merely because such terrestrial services operate on the same frequencies as global or international satellite communications services.<sup>247</sup> Any licenses we might auction in the 37/42 GHz band would authorize terrestrial use only; any licensee wishing to use the subject frequencies to operate an earth station would be required to obtain an authorization pursuant to Part 25 of our rules in order to do so. Thus, if a 37/42 GHz band geographic area licensee decides to operate an earth station as part of an international or global FSS system, it would be required to do so under a license issued pursuant to the Part 25 procedures that apply to FSS. Accordingly, we request comment on a number of issues relative to the competitive bidding procedures we should use if we decide to conduct an auction of exclusive geographic area licenses in the 37/42 GHz band.

<sup>245</sup> See discussion in reference to NATO requirement of NTIA in the 36-51 GHz *Second R&O* at ¶¶ 42-49.

<sup>246</sup> 47 U.S.C. § 309(j); see *BBA Report and Order*, 15 FCC Rcd 22709.

<sup>247</sup> See, e.g., *First R&O and Further Notice*, 16 FCC Rcd at 4218 ¶ 326; Amendment of the Commission's Rules With Regard to the 3650-3700 MHz Government Transfer Band, ET Docket No. 98-237; The 4.9 GHz Band Transferred from Federal Government Use, WT Docket No. 00-32, *First Report and Order and Second Notice of Proposed Rule Making*, 15 FCC Rcd 20488 at ¶ 20 n.64 (2000) (stating that the assignment of licenses for terrestrial services by competitive bidding is not prohibited by the ORBIT Act); *24 GHz Report and Order*, 15 FCC Rcd 16934 (proposing rules to award licenses for terrestrial fixed service by competitive bidding in the 24 GHz band, which is also allocated to satellite services); *39 GHz R&O*, 12 FCC Rcd 18600; *39 GHz Band Auction Closes, Public Notice*, DA 00-1035, Report No. AUC-30-E (rel. May 10, 2000) (assigning terrestrial fixed service licenses by auction in the 39 GHz band, which is also allocated to satellite services). See also TRW Inc., Request for Waiver of the Commission's Rules to Provide Fixed Satellite Service in the 39 GHz Band, *Memorandum Opinion and Order*, DA 01-371, File No. 0000137436 (rel. March 12, 2001). See also ORBIT Act, Pub. L. No. 106-180, 114 Stat. 48 § 647 (codified at 47 U.S.C. § 765f).

## 1. Incorporation by Reference of the Part 1 Standardized Auction Rules

97. We propose to conduct any auction of initial exclusive area licenses in the 37/42 GHz band in conformity with the general competitive bidding rules set out in Part 1, Subpart Q, of our rules, and substantially consistent with the bidding procedures that have been employed in previous auctions.<sup>248</sup> Specifically, we propose to employ the Part 1 rules governing competitive bidding design, designated entities, application and payment procedures, reporting requirements, collusion issues, and unjust enrichment.<sup>249</sup> Under this proposal, such rules would be subject to any modifications that the Commission may adopt in its Part 1 proceeding.<sup>250</sup> We seek comment on whether any of our Part 1 rules or other auction procedures are inappropriate or should be modified for an auction of licenses in this band.

## 2. Provisions for Designated Entities

98. In authorizing the Commission to use competitive bidding, Congress mandated that the Commission "ensure that small businesses, rural telephone companies, and businesses owned by members of minority groups and women are given the opportunity to participate in the provision of spectrum-based services."<sup>251</sup> In addition, Section 309(j)(3)(B) of the Communications Act provides that, in establishing eligibility criteria and bidding methodologies, the Commission shall promote "economic opportunity and competition . . . by avoiding excessive concentration of licenses and by disseminating licenses among a wide variety of applicants, including small businesses, rural telephone companies, and businesses owned

<sup>248</sup> See, e.g., Amendment of Part 1 of the Commission's Rules - Competitive Bidding Procedures, WT Docket No. 97-82, Second Order on Reconsideration of the Third Report and Order, and Order on Reconsideration of the Fifth Report and Order, 18 FCC Rcd 10180 (2003) ("*Second Order on Reconsideration of the Third Report and Order and Order on Reconsideration the Fifth Report and Order*"); Amendment of Part 1 of the Commission's Rules -- Competitive Bidding Procedures, Eighth Report and Order, 17 FCC Rcd 2962 (2002); Amendment of Part 1 of the Commission's Rules -- Competitive Bidding Procedures, Seventh Report and Order, 16 FCC Rcd 17546 (2001); Amendment of Part 1 of the Commission's Rules -- Competitive Bidding Procedures, Order on Reconsideration of the Third Report and Order, Fifth Report and Order, and Fourth Further Notice of Proposed Rule Making, 15 FCC Rcd 15293 (2000) ("*Part 1 Recon. Order and Part 1 Fifth Report and Order, Fourth Further Notice of Proposed Rule Making*"); Amendment of Part 1 of the Commission's Rules -- Competitive Bidding Procedures, Allocation of Spectrum Below 5 GHz Transferred from Federal Government Use, Third Report and Order and Second Further Notice of Proposed Rule Making, 13 FCC Rcd 374 (1997) (modified by Erratum, DA 98-419 (rel. March 2, 1998)) (Part 1 Third Report and Order); Amendment of Part 1 of the Commission's Rules -- Competitive Bidding Procedures, WT Docket No. 97-82, Order, Memorandum Opinion and Order and Notice of Proposed Rule Making, 12 FCC Rcd 5686 (1997).

<sup>249</sup> See 47 C.F.R. § 1.2101 *et. seq.* We note that in the *First NPRM and Order*, the Commission sought comment on competitive bidding design and procedures for the 37 GHz band. However, since release of the *36-51 GHz First NPRM and Order* in 1995, the Commission has made substantial amendments and modifications to its Part 1 general competitive bidding rules for all auctionable services. See *Part 1 Third Report and Order*, 13 FCC Rcd 374; *Part 1, Recon. Order and Part 1 Fifth Report and Order*, 15 FCC Rcd 15293; *Second Order on Reconsideration of the Third Report and Order and Order on Reconsideration of the Fifth Report and Order*, 18 FCC Rcd 10180. In addition, many of the auction procedures upon which the *First NPRM and Order* sought comment are matters on which the Wireless Telecommunications Bureau regularly seeks comment and makes a determination under its delegated authority. Amendment of Part 1 of the Commission's Rules -- Competitive Bidding Procedures, Order, Memorandum Opinion and Order and Notice of Proposed Rulemaking, 12 FCC Rcd 5686, 5697-98, ¶ 16 (1997) (citing 47 C.F.R. § 0.131).

<sup>250</sup> See *Part 1, Recon. Order and Part 1 Fifth Report and Order*, 15 FC Rcd 15293 (2000), *aff'd in part and modified in part, Second Order on Reconsideration of the Third Report and Order and Order on Reconsideration the Fifth Report and Order*, WT Docket No. 97-82, 18 FCC Rcd 10,180 (2003).

<sup>251</sup> See 47 U.S.C. § 309(j)(4)(D).

by members of minority groups and women."<sup>252</sup>

99. Section 1.2110(c)(1) of our rules provides that the definition of a small business is established on a service-specific basis, taking into account the capital requirements and other characteristics of each particular service in establishing the appropriate threshold.<sup>253</sup> As explained above, if we apply a geographic area licensing model to the 37/42 GHz bands, we propose to apply service rules for the 37/42 GHz band that are substantially the same as the rules for the 39 GHz band.<sup>254</sup> Thus, to the extent feasible, based upon the proximity, similarity, anticipated use (e.g., point-to-point, point-to-multipoint, fixed and mobile terrestrial operations), and propagation characteristics of these bands, we would have established regulatory symmetry. Accordingly, we anticipate that any services that geographic area licensees deploy in these bands would be similar to those services deployed in the 39 GHz band and would have comparable capital requirements. We also believe that geographic area licensees in these bands would be presented with issues and costs similar to those presented to 39 GHz band licensees, including those involved in developing markets, technologies, and services.

100. In light of the similarities we have identified, we therefore propose here the same small business size standards the Commission adopted for the 39 GHz band.<sup>255</sup> Accordingly, we propose to define a small business as an entity with average annual gross revenues for the preceding three years not exceeding \$40 million, and a very small business as an entity with average annual gross revenues for the preceding three years not exceeding \$15 million.<sup>256</sup> We believe that our proposed approach would provide a variety of businesses with the opportunity to participate in an auction of licenses in this band and afford licensees substantial flexibility for the provision of services with varying capital costs. If we ultimately adopt our proposed small business definitions for the 37/42 GHz band, we further propose to provide small businesses with a bidding credit of fifteen percent and very small businesses with a bidding credit of twenty-five percent. The bidding credits we propose here are those set out in the standardized schedule in Part 1 of our rules.<sup>257</sup> Accordingly, we seek comment on the use of these standards and associated bidding credits for applicants to be licensed in the 37/42 GHz band, with particular focus on the appropriate definitions of small and very small businesses as they relate to the size of the geographic area to be covered and the spectrum allocated to each license. In discussing these issues, we invite commenters to address the expected capital requirements for services in these bands and other characteristics of the service. Additionally, we invite commenters to use comparisons with other services for which the Commission has already established auction procedures as a basis for their comments regarding the appropriate small business size standards.

101. We believe that the small business size standards and corresponding bidding credits proposed above would provide a variety of businesses with opportunities to participate in the auction of

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<sup>252</sup> See 47 U.S.C. § 309(j)(3)(B).

<sup>253</sup> 47 U.S.C. § 1.2110(c)(1); Implementation of Section 309(j) of the Communications Act – Competitive Bidding, PP Docket No. 93-253, *Second Memorandum Opinion and Order*, 9 FCC Rcd 7245, 7269 ¶ 145 (1994).

<sup>254</sup> See *supra*, para. 9.

<sup>255</sup> *Report and Order and Second NPRM*, 12 FCC Rcd at 18661-64 ¶¶ 149-54.

<sup>256</sup> We are coordinating these proposed small business size standards with the U.S. Small Business Administration.

<sup>257</sup> In the *Part 1 Third Report and Order*, the Commission adopted a standard schedule of bidding credits, the levels of which were developed based on the Commission's auction experience. *Part 1 Third Report and Order*, 13 FCC Rcd at 403-04 ¶ 47; see also 47 C.F.R. § 1.2110(f)(2). We note, however, that the standardized bidding credits are not the same as those adopted for the 39 GHz band. *Report and Order and Second NPRM*, 12 FCC Rcd at 18,661-64 ¶¶ 149-54.

licenses for this band and afford licensees substantial flexibility for the provision of services with varying capital costs.<sup>258</sup> In developing these proposals, however, we acknowledge the difficulty in accurately predicting the market forces that will exist at the time we license these frequencies. Thus, our forecasts of types of services that licensees will offer over these bands may require adjustment depending upon ongoing technological developments and changes in market conditions. Accordingly, to the extent commenters support a different bidding credit regime, or believe that there are any distinctive characteristics to the 37/42 GHz band that suggest we should not employ bidding credits in this instance, commenters should support their proposals with relevant information. For example, commenters should provide information on the types of system architecture that licensees are likely to deploy in these bands, the availability of equipment, market conditions, and other factors that may affect the capital requirements or the types of services that licensees may provide.<sup>259</sup>

102. We also seek comment on whether the small business provisions we propose today are sufficient to promote participation by businesses owned by minorities and women, as well as rural telcos. To the extent that commenters propose additional provisions to ensure participation by minority-owned or women-owned businesses, they should address how we should craft such provisions to meet the relevant standards of judicial review.<sup>260</sup>

#### IV. PROCEDURAL MATTERS

##### A. Regulatory Flexibility Analysis

103. As required by the Regulatory Flexibility Act ("RFA") of 1980,<sup>261</sup> the Commission has prepared an Initial Regulatory Flexibility Analysis ("IRFA"), with respect to this *Third Notice of Proposed Rule Making*, of the possible significant economic impact on small entities of the policies and rules proposed in this document. The IRFA is set out in Appendix B. We request written public comment on the IRFA. Comments must be filed in accordance with the same filing deadlines as comments filed in this rulemaking proceeding and must have a separate and distinct heading designating them as responses to the Initial Regulatory Flexibility Analysis.

##### B. Paperwork Reduction Analysis

104. This *Third Notice of Proposed Rule Making* contains a proposed information collection. As part of our continuing effort to reduce paperwork burdens, we invite the general public and the Office of Management and Budget ("OMB") to take this opportunity to comment on the information collections contained in this *Third Notice of Proposed Rule Making*, as required by the Paperwork Reduction Act of 1995, Pub. L. No. 104-13. Public and agency comments are due at the same time as other comments on this *Third Notice of Proposed Rule Making*; OMB comments are due sixty days from the date of publication of the *Third Notice of Proposed Rule Making* in the Federal Register. Comments should address: (a) whether the proposed collection of information is necessary for the proper performance of the functions of the Commission, including whether the information shall have practical utility; (b) the accuracy of the Commission's burden estimates; (c) ways to enhance the quality, utility, and clarity of the

<sup>258</sup> *Report and Order and Second NPRM*, 12 FCC Rcd at 18,661-64 ¶¶ 149-54.

<sup>259</sup> See 47 U.S.C. § 1.2110(c)(1) (provides factors used to determine the appropriate threshold for the use of bidding credits).

<sup>260</sup> See *United States v. Virginia*, 518 U.S. 515 (1996) (applying an intermediate standard of review to a state program based on gender classification); *Adarand Constructors v. Peña*, 515 U.S. 200 (1995) (requiring a strict scrutiny standard of review for Congressionally mandated race-conscious measures).

<sup>261</sup> See 5 U.S.C. § 603.

information collected; and (d) ways to minimize the burden of the collection of information on the respondents, including the use of automated collection techniques or other forms of information technology.

105. Written comments by the public on the proposed information collections are due sixty days after the date of publication in the Federal Register. Written comments must be submitted by the OMB on the proposed information collections on or before sixty days after the date of publication in the Federal Register. In addition to filing comments with the Secretary, a copy of any comments on the information collections contained herein should be submitted to Judy Boley Herman, Federal Communications Commission, Room 1-C804, 445 12th Street, S.W., Washington, D.C. 20554, or via the Internet to [jbHerman@fcc.gov](mailto:jbHerman@fcc.gov), and to Kristy LaLonde, OMB Desk Officer, Room 10234 New Executive Office Building, 725 17th Street, N.W., Washington, D.C. 20503, or via the Internet to [Kristy\\_LaLonde@omb.eop](mailto:Kristy_LaLonde@omb.eop).

### C. Ex Parte Presentations

106. For purposes of this permit-but-disclose notice and comment rulemaking proceeding, members of the public are advised that *ex parte* presentations are permitted, provided they are disclosed under the Commission's rules.<sup>262</sup>

### D. Comment Dates

107. Pursuant to Sections 1.415 and 1.419 of the Commission's rules, 47 C.F.R. §§ 1.415, 1.419, interested parties may file comments on or before [thirty days from publication in the Federal Register], and reply comments on or before [forty-five days from publication in the Federal Register]. Comments may be filed using the Commission's Electronic Comment Filing System ("ECFS") or by filing paper copies.<sup>263</sup>

108. Comments filed through the ECFS can be sent as an electronic file via the Internet to <http://www.fcc.gov/e-file/ecfs.html>. Generally, only one copy of an electronic submission must be filed. If multiple docket or rulemaking numbers appear in the caption of this proceeding, *i.e.*, PP Docket No. 93-253, however, commenters must transmit one electronic copy of the comments to each docket or rulemaking number referenced in the caption. In completing the transmittal screen, commenters should include their full name, Postal Service mailing address, and the applicable docket or rulemaking number. Parties may also submit an electronic comment by Internet e-mail. To get filing instructions for e-mail comments, commenters should send an e-mail to [ecfs@fcc.gov](mailto:ecfs@fcc.gov), and should include the following words in the body of the message, "get form <your e-mail address>." A sample form and directions will be sent in reply. Parties who choose to file by paper must file an original and four copies of each filing. If more than one docket or rulemaking number appears in the caption of this proceeding, commenters must submit two additional copies for each additional docket or rulemaking number. Filings can be sent by hand or messenger delivery, by commercial overnight courier, or by first-class or overnight U.S. Postal Service mail (although we continue to experience delays in receiving U.S. Postal Service mail). The Commission's contractor, Natek, Inc., will receive hand-delivered or messenger-delivered paper filings for the Commission's Secretary at 236 Massachusetts Avenue, N.E., Suite 110, Washington, D.C. 20002. The filing hours at this location are 8:00 a.m. to 7:00 p.m. All hand deliveries must be held together with rubber bands or fasteners. Any envelopes must be disposed of before entering the building. Commercial

<sup>262</sup> See generally 47 C.F.R. §§ 1.1202, 1.1203, 1.1206(a).

<sup>263</sup> See Electronic Filing of Documents in Rulemaking Proceedings, *Report and Order*, GC Docket No. 97-113, 13 FCC Rcd 11,322 (1998); Electronic Filing of Documents in Rulemaking Proceedings, *Memorandum Opinion and Order*, GC Docket No. 97-113, 13 FCC Rcd 21,517 (1998).



overnight mail (other than U.S. Postal Service Express Mail and Priority Mail) must be sent to 9300 East Hampton Drive, Capitol Heights, MD 20743. U.S. Postal Service first-class mail, Express Mail, and Priority Mail should be addressed to 445 12<sup>th</sup> Street, SW, Washington, D.C. 20554. All filings must be addressed to the Commission's Secretary, Office of the Secretary, Federal Communications Commission.

**E. Further Information**

109. For further information concerning this rulemaking proceeding, contact Charles Oliver (legal) or Michael Pollak (engineering) at (202) 418-2487, TTY (202) 418-7233, Wireless Telecommunications Bureau, Federal Communications Commission, Washington, D.C. 20554.


110. Alternative formats (computer diskette, large print, audio cassette, and Braille) are available to persons with disabilities by contacting Brian Millin at (202) 418-7426, TTY (202) 418-7365, or via e-mail to [bmillin@fcc.gov](mailto:bmillin@fcc.gov). This *Notice of Proposed Rulemaking* can be downloaded at <http://www.fcc.gov/Wireless/Orders/2003/>.

**V. ORDERING CLAUSES**

111. Accordingly, IT IS ORDERED that, pursuant to Sections 1, 4(i), 7, 301, 303, 308 and 309(j) of the Communications Act of 1934, 47 U.S.C. §§ 151, 154(i), 157, 301, 303, 308, 309(j), NOTICE IS HEREBY GIVEN of the proposed regulatory changes described above and as specified in Appendix A, and that comment is sought on these proposals.

112. IT IS FURTHER ORDERED that the Commission's Consumer and Governmental Affairs Bureau, Reference Information Center, SHALL SEND a copy of this *Third Notice of Proposed Rule Making*, including the Initial Regulatory Flexibility Analysis to the Chief Counsel for Advocacy of the Small Business Administration.

FEDERAL COMMUNICATIONS COMMISSION

  
Marlene Dortch  
Secretary